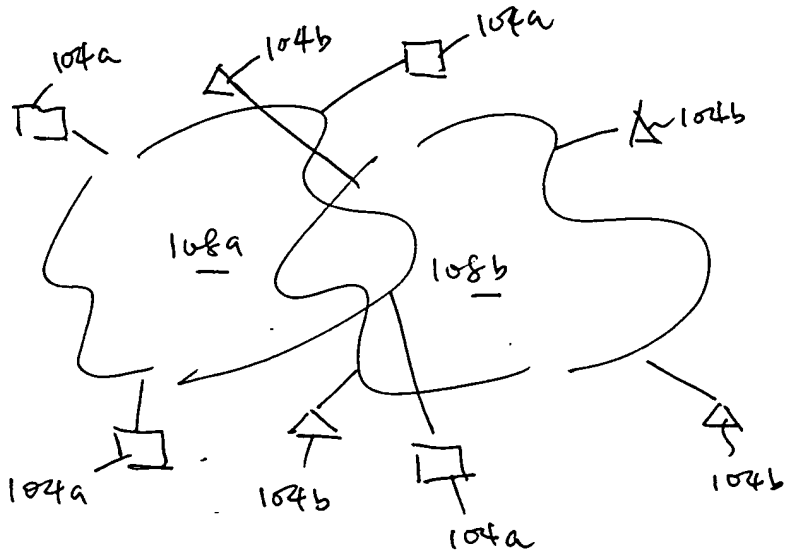

FIG. 1

Document: US20050249199A1

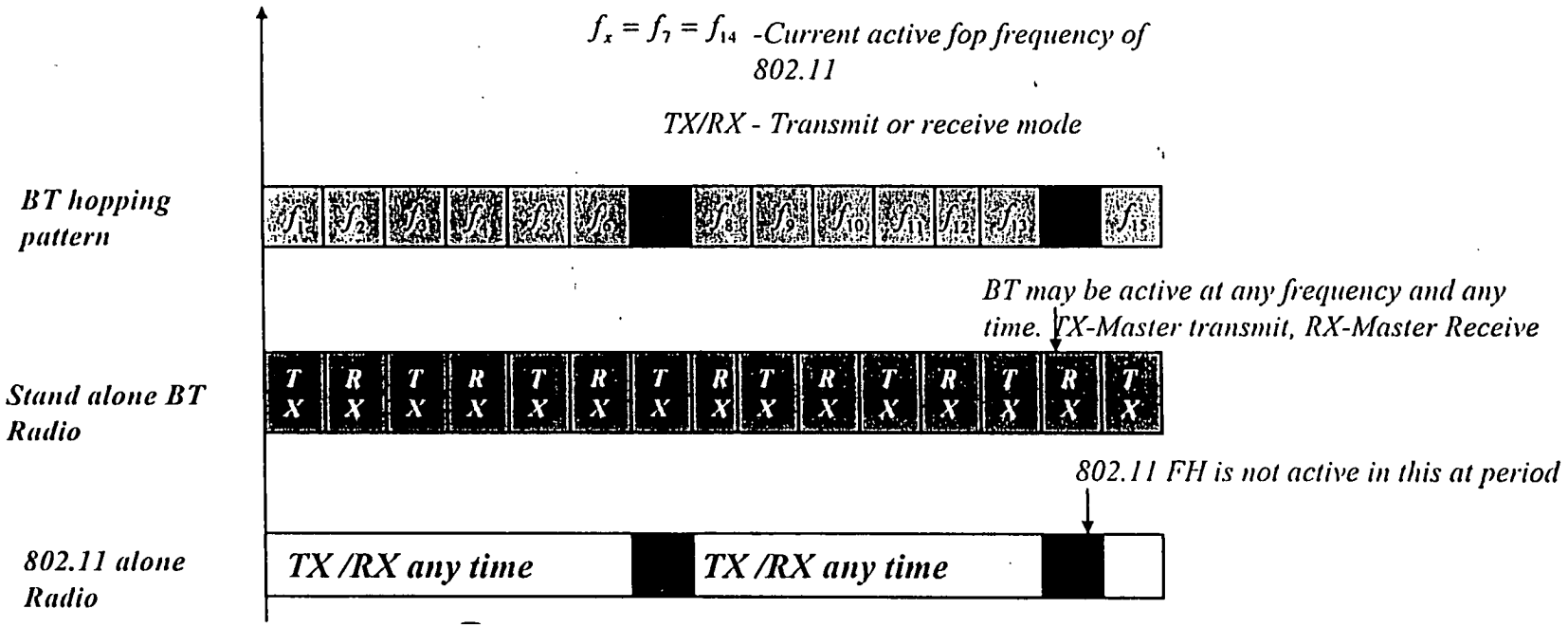
$f_x = f_7 = f_{14}$ -Current active fop frequency of 802.11
TX/RX - Transmit or receive mode
BT hopping pattern
BT may be active at any frequency and any time. TX-Master transmit, RX-Master Receive
Stand alone BT Radio
T X
R X
802.11 FH is not active in this at period
802.11 alone Radio
TX /RX any time
TX /RX any time

FIG. 2a

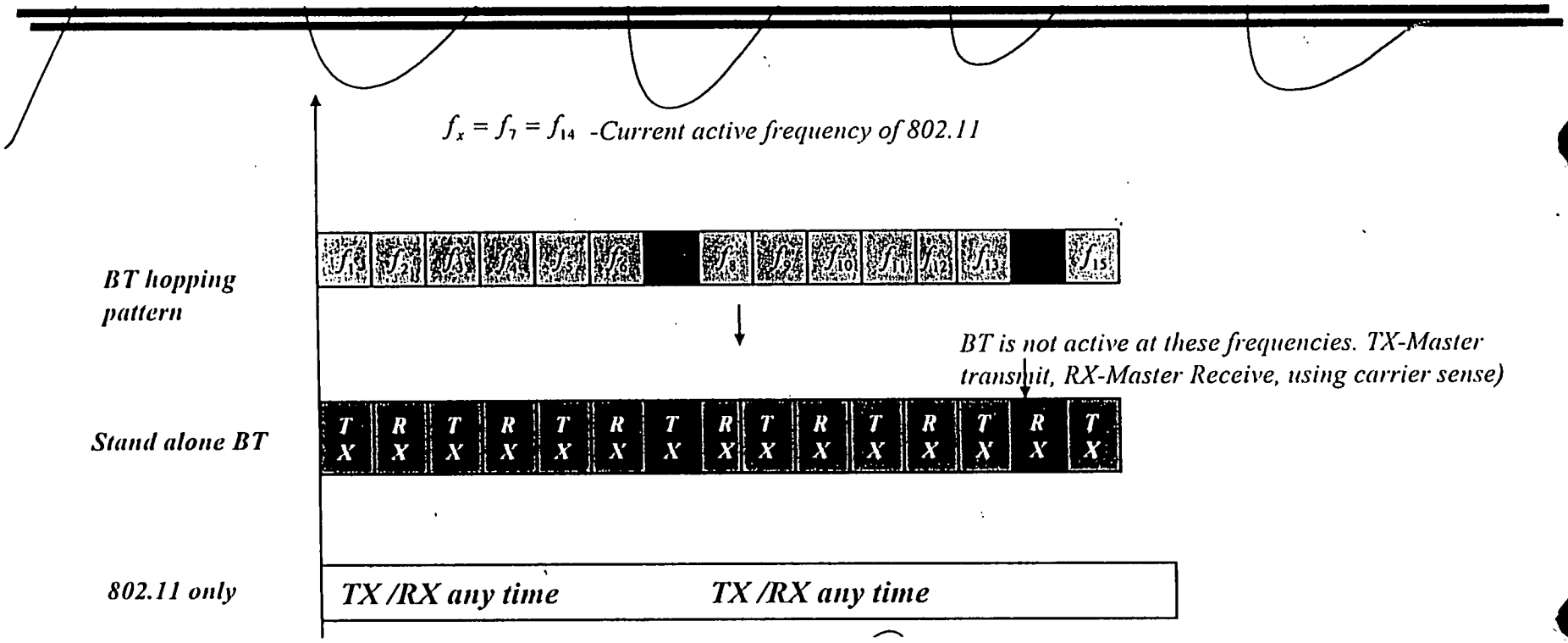
$f_x = f_7 = f_{14}$ -Current active frequency of 802.11
BT hopping pattern
BT is not active at these frequencies. TX-Master transmit, RX-Master Receive, using carrier sense)
Stand alone BT
T X
R X
802.11 only
TX /RX any time
TX /RX any time

FIG. 2b

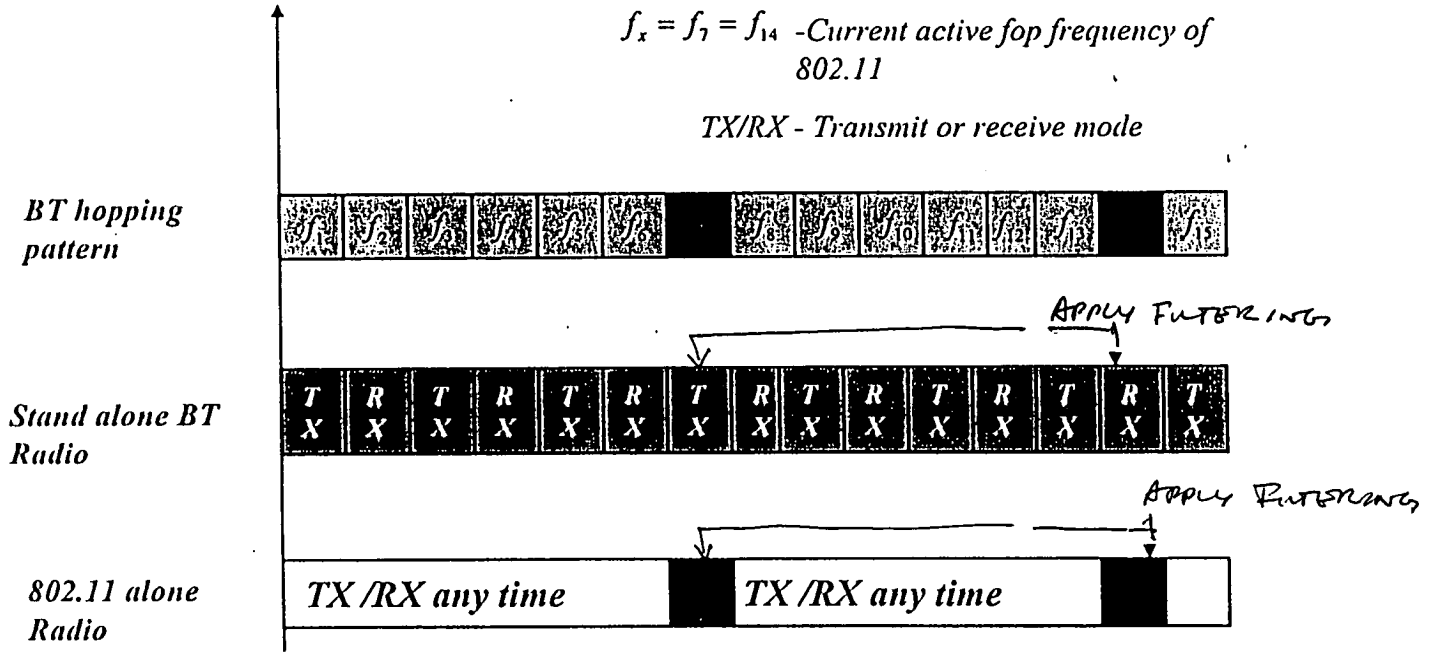
$f_x = f_7 = f_{14}$ -Current active fop frequency of 802.11
TX/RX - Transmit or receive mode
BT hopping pattern
Stand alone BT Radio
802.11 alone Radio
APPLY FILTERING
APPLY FILTERING
TX /RX any time
TX /RX any time

FIG. 2C

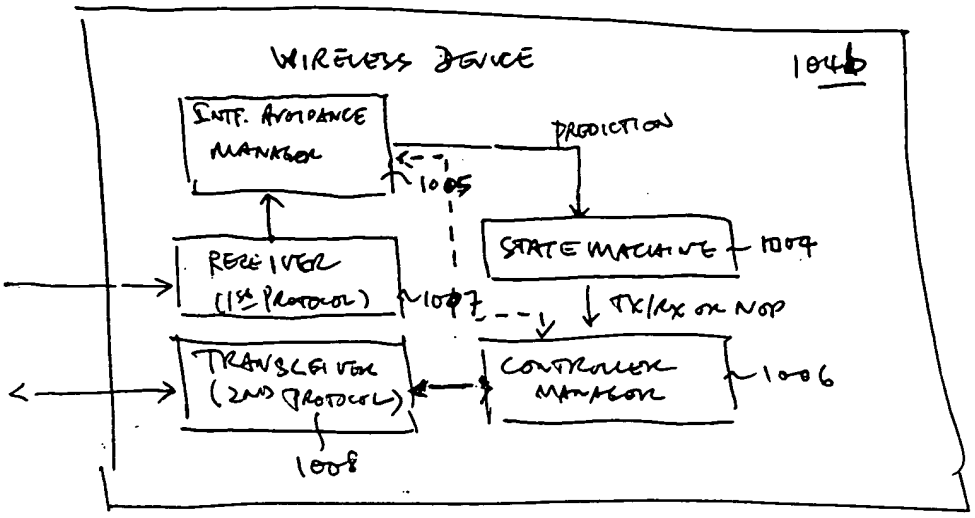
WIRELESS DEVICE
1004b
INTF. AVOIDANCE MANAGER
PREDICTION
1005
STATE MACHINE
1004
RECEIVER (1ST PROTOCOL)
1007
TX/RX OR NOP
TRANSCEIVER (2ND PROTOCOL)
CONTROLLER MANAGER
1006
1008

FIG. 3a

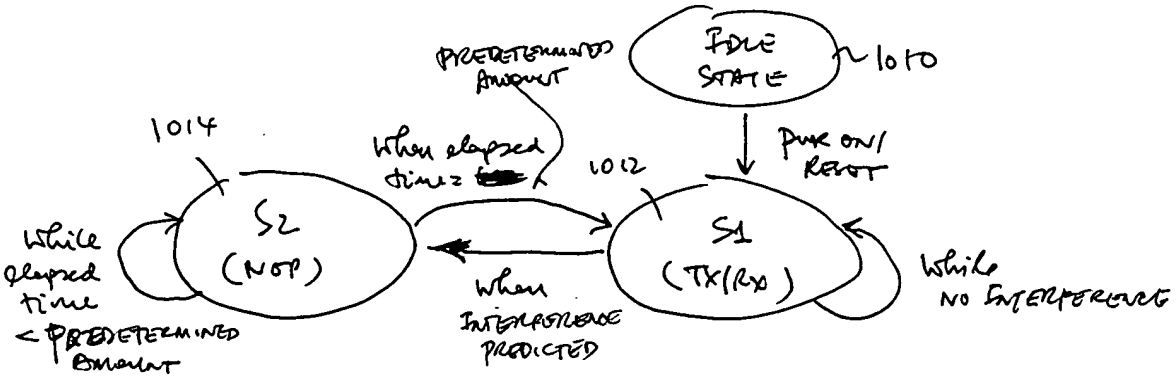
PREDETERMINED AMOUNT
IDLE STATE
1010
1014
When elapsed time =
1012
PWR ON/ RESET
S2 (NOP)
S1 (TX/RX)
While elapsed time < PREDETERMINED AMOUNT
When INTERFERENCE PREDICTED
While NO INTERFERENCE

FIG. 3b

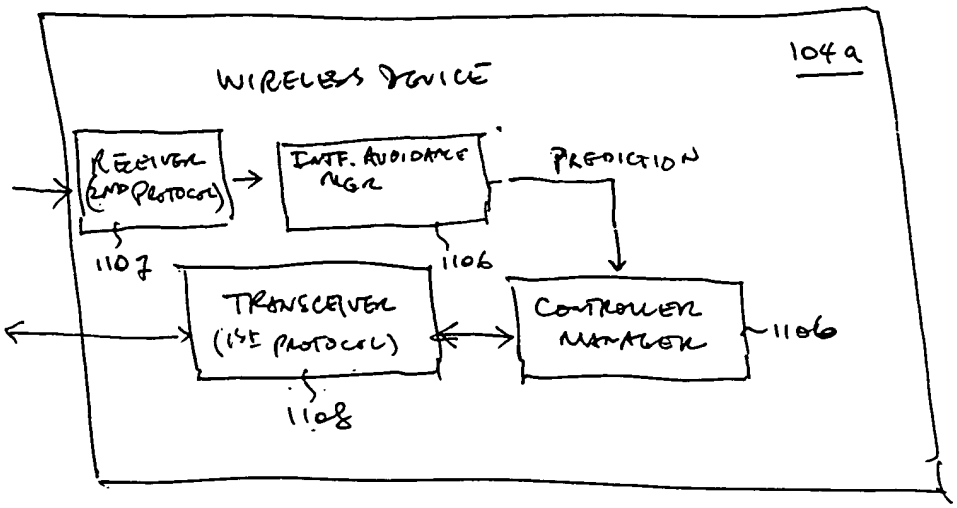
WIRELESS DEVICE
104a
RECEIVER (AND PROTOCOL)
INTF. AVOIDANCE MGR
PREDICTION
1107
1106
TRANSCEIVER (1ST PROTOCOL)
CONTROLLER MANAGER
1106
1108

FIG. 4a

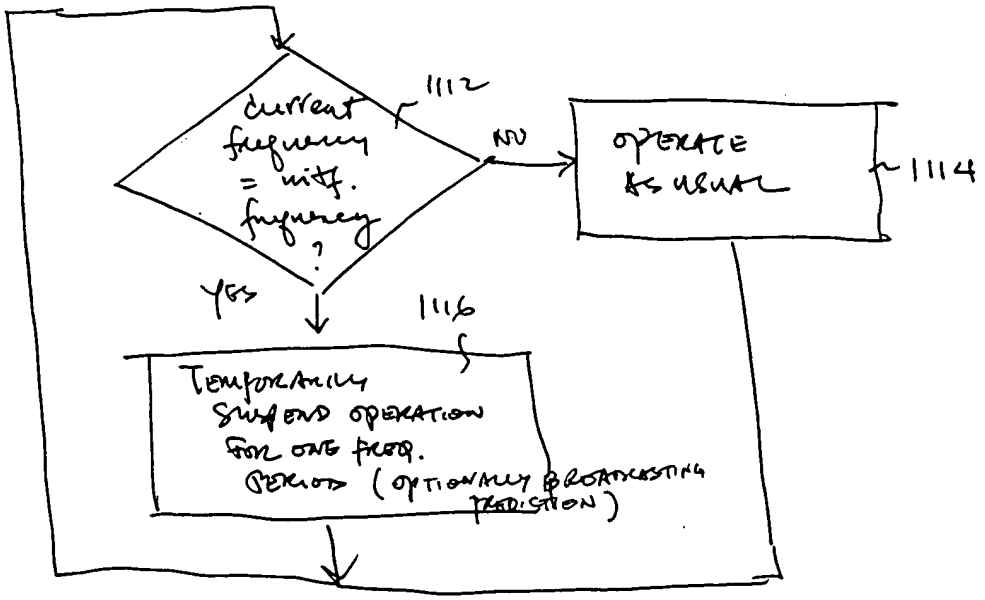
current frequency = intf. frequency ?
1112
NO
OPERATE AS USUAL
1114
YES
1116
TEMPORARILY SUSPEND OPERATION FOR ONE FREQ. PERIOD (OPTIONALLY BROADCASTING PREDICTION)

FIG. 4b

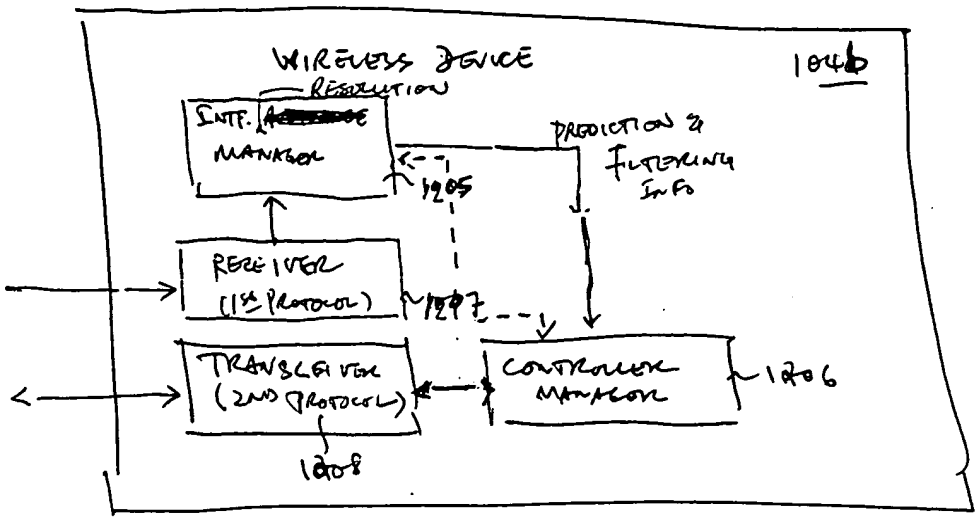
WIRELESS DEVICE
1040
RESOLUTION
INTF. MANAGER
PREDICTION & FILTERING INFO
1205
RECEIVER (1ST PROTOCOL)
1207
TRANSCEIVER (2ND PROTOCOL)
CONTROLLER MANAGER
1206
1208

FIG. 5a

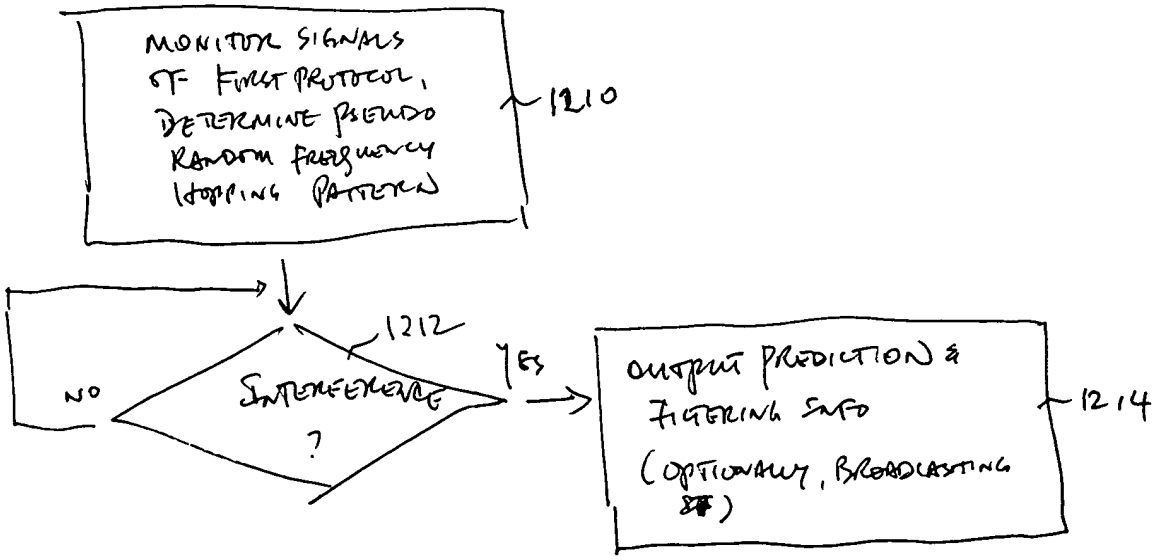
MONITOR SIGNALS OF FIRST PROTOCOL, DETERMINE PSEUDO RANDOM FREQUENCY HOPPING PATTERN
1210
1212
INTERFERENCE ?
NO
YES
OUTPUT PREDICTION & FILTERING INFO
(OPTIONALLY, BROADCASTING IT)
1214

FIG. 5b

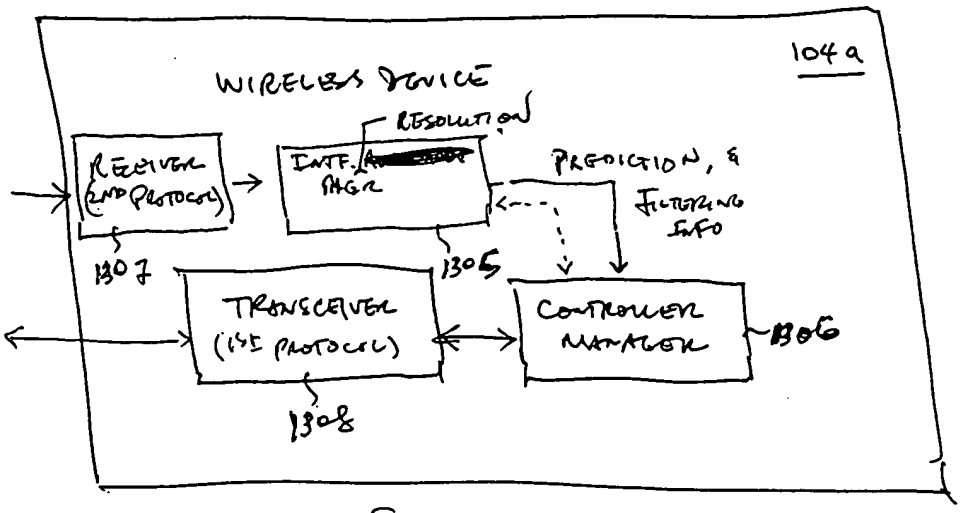
104a
WIRELESS DEVICE
RECEIVER (2ND PROTOCOL)
INTF. MGR
RESOLUTION
PREDICTION, & FILTERING INFO
1307
1305
TRANSCEIVER (1ST PROTOCOL)
CONTROLLER MANAGER
1306
1308

FIG. 6a

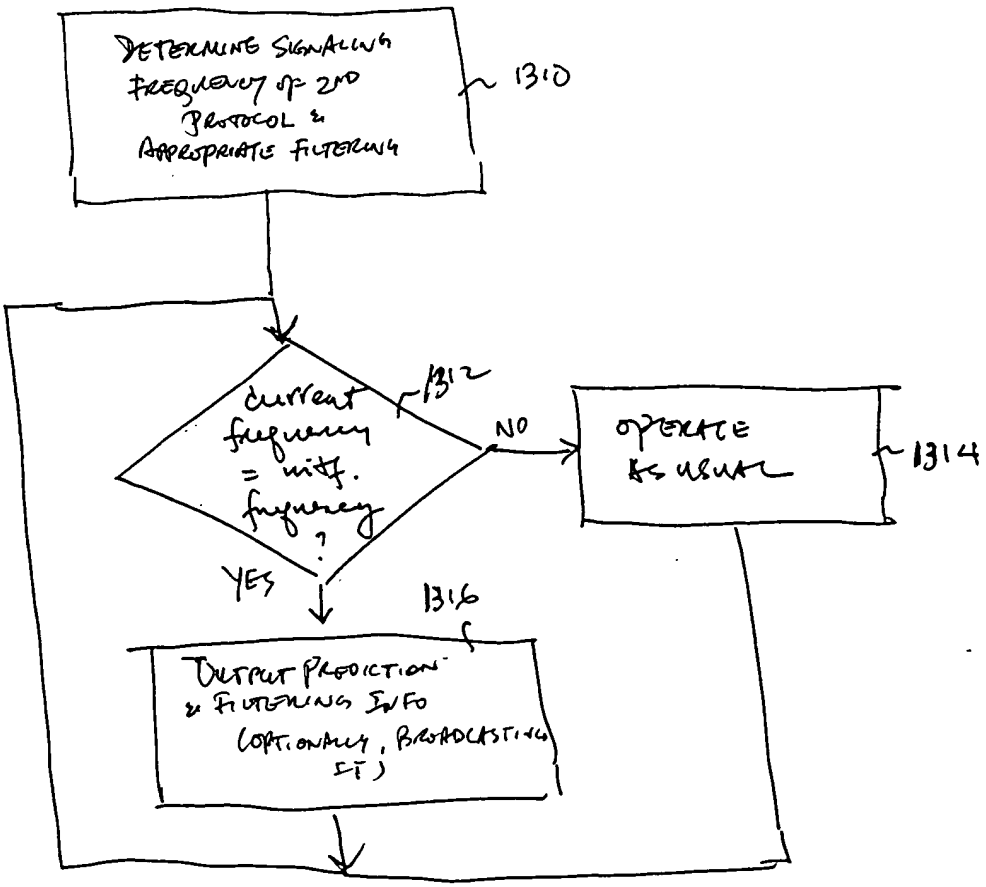
DETERMINE SIGNALING FREQUENCY OF 2ND PROTOCOL & APPROPRIATE FILTERING
1310
current frequency = intf. frequency ?
1312
NO
OPERATE AS USUAL
1314
YES
1316
OUTPUT PREDICTION & FILTERING INFO (OPTIONALLY, BROADCASTING IT)

FIG. 6b

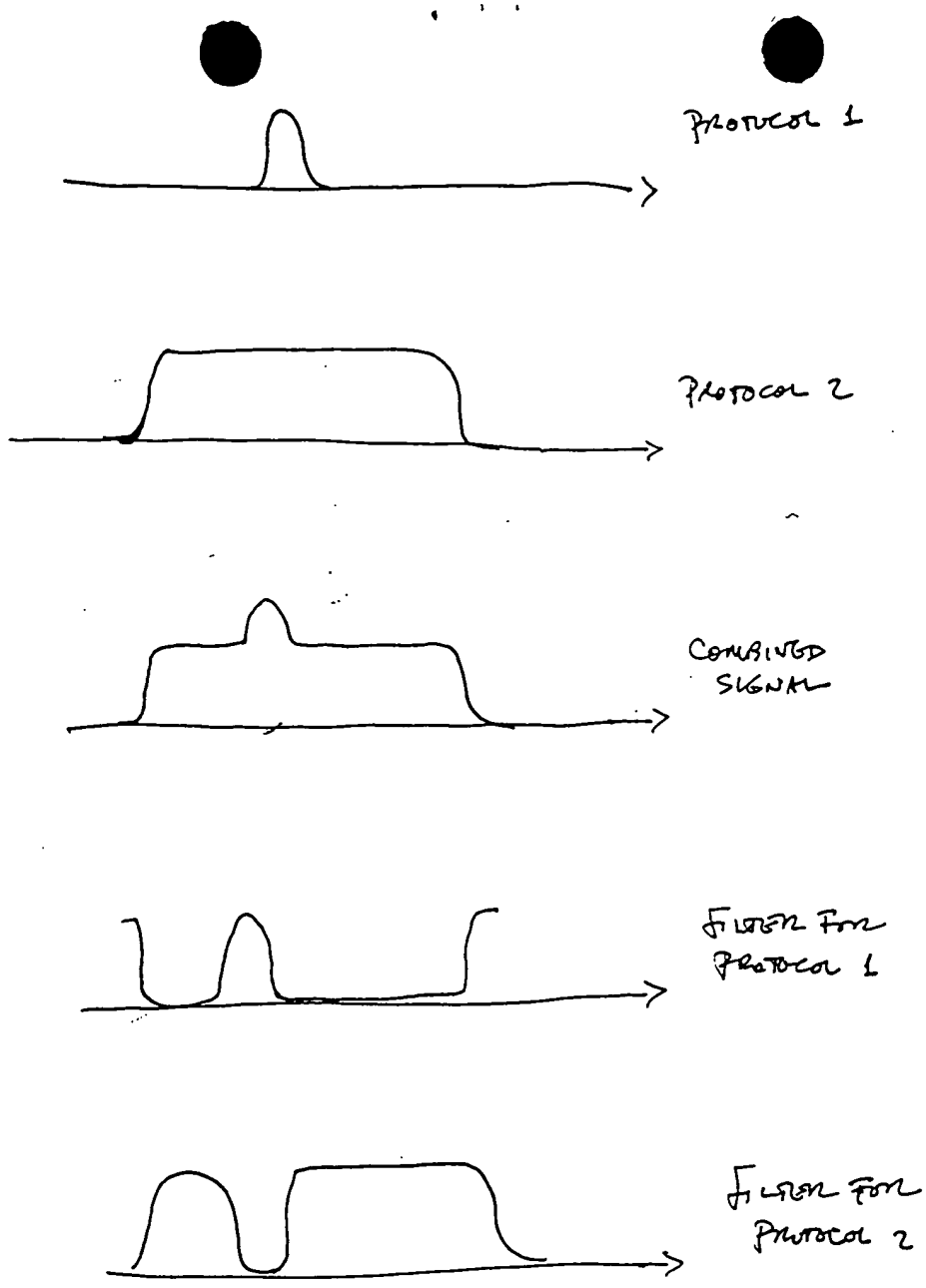
PROTOCOL 1
PROTOCOL 2
COMBINED SIGNAL
FILTER FOR PROTOCOL 1
FILTER FOR PROTOCOL 2

FIG 7